

RESPONSE UNDER 37 C.F.R. § 1.111

US Application No. 09/915,528

Q63846

2. Claims 4-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wargotz, et al. in view of McGregor, et al. as applied to claim 1 above, and further in view of Livingston, et al.

Applicants respectfully traverse.

Claim Rejections - 35 U.S.C. § 103

1. Claims 1-3, 8 and 9 In View Of McGregor, et al..

In rejecting claims 1-3, 8 and 9 in view of McGregor, et al., the grounds of rejection state that

Wargotz, et al. discloses a cable with at least one transmission element, which is surrounded by a sheath of insulation material, wherein the sheath consists of only an inner layer and an outer layer (Fig. 1), which are made of materials being firmly bonded together when the outer layer is extruded around the inner layer (col. 3, lines 8-18) (re claim 1). Wargotz, et al. also discloses the inner and outer layers being made of the same base material (re claim 8), and there is no separate adhesive layer between the inner and outer layers (re claim 9).

Wargotz, et al. does not specifically disclose the values for tensile strength and elongation at break of the inner layer are significantly lower than those of the outer layer (re claims 1 and 9).

McGregor, et al. discloses a cable comprising a sheath consisting of an inner layer and an outer layer, wherein additives are mixed into the inner layer (col. 7, lines 37-38) to resist insulation degradation. It would have been obvious to one skilled in the art to mix additives as taught by McGregor, et al. in the inner layer of Wargotz, et al. to resist insulation degradation. Noted that since the inner layer includes additives, the values for tensile strength and elongation at break of the inner layer are significantly lower than those of the outer layer (re claims 1, 8 and 9).

Re claims 2 and 3, Wargotz, et al. discloses that the thickness of the outer layer can be the same, less or greater than that of the inner layer. Therefore, it would have been obvious that

depending on the specific use of the resulting cable, one skilled in the art would have chosen a suitable thickness ratio of the inner and outer layers, including 60:40 and 40:60.

Office Action at pages 2-3. Applicants respectfully disagree.

The Manual Of Patent Examining Procedure ("MPEP") sets forth three basic criteria that must all be met to establish a prima facie case of obviousness:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP at Section 2143. Applicants respectfully submit that the grounds of rejection do not meet the foregoing criteria.

The present invention is directed to a cable comprising, *inter alia*, a sheath of insulation material that consists of two layers. Although this is an important feature of the invention, it does not represent the entire scope of claims 1 and 9.

Rather, claims 1 and 9 of the present application also recite special characteristics of the two layers, in particular, the relative values for tensile strength and elongation at break. A sheath covered by these claims has the advantage that it easily can be removed from the conductor, e.g., for connection purposes - as discussed in the Specification at page 2, lines 16 to 18.

The grounds of rejection rely on Wargotz et al. as a primary reference for its disclosure of a two layer sheath. The Examiner acknowledges that this reference fails to teach or suggest "values for tensile strength and elongation at break of the inner layer are significantly lower than

those of the outer layer” as recited in claims 1 and 9. Accordingly, the grounds of rejection rely on McGregor et al. to allege that this reference, in combination with Wargotz et al. makes up for the deficiency.

As a preliminary matter, Applicants submit that, even if, assuming for the sake of argument alone, one skilled in the art were to have combined the applied references as alleged, the resulting combination would not have taught or suggested a cable in which the values for tensile strength and elongation at break of the inner layer are significantly lower than those of the outer layer. That is, the last criteria quoted above from Section 2143 of the MPEP is not met.

Specifically, Wargotz, et al. (3,852,518) and McGregor, et al. only shows cables with a two layer sheath of insulation material. The references are completely silent on the relative tensile strength and elongation at break of the inner and outer layers.

Wargotz, et al. describes (see abstract) an underground power and service entrance cable with a sheath of a two layer polyethylene insulation. The two layers are fused together and cross-linked. The insulation is mechanically stronger, thermoset throughout its full thickness, and has a superior stability in water. The issue of easily removing the insulation from the conductor is not touched upon by this reference. There is no hint in the direction of the invention. Indeed, the grounds of rejection acknowledge this: “Wargotz, et al. does not specifically disclose the values for tensile strength and elongation at break of the inner layer are significantly lower than those of the outer layer (re claims 1 and 9).”

Contrary to the grounds of rejection, McGregor et al. does not make up for this deficiency. McGregor, et al. discloses a magnet wire insulation that can withstand voltage wave

shapes present in inverter driven motors (see abstract). This kind of insulation is needed in this special field of use, because a degradation of the wire insulation is caused by high voltage and higher frequency wave shapes (see column 1, lines 30 to 36). To avoid this drawback, a mixture of silica and chromium oxide is dispersed in at least one of two layers of the insulation which surrounds the electrical conductor (see claim 1). Again, however, the reference makes no hint in the direction of the invention. The assertion made in the grounds of rejection that “since the inner layer includes additives, the values for tensile strength and elongation at break of the inner layer are [**necessarily**] significantly lower than those of the outer layer,” is mere supposition and finds no technical basis. That is, the disclosure of the presence of additives in a layer does not teach or suggest anything about that layer’s tensile strength or elongation at break relative to other layers. One skilled in the art would need to know the desired final characteristics (i.e., the claimed features) in order to make the insulation as claimed.

The Examiner cannot leap to the conclusion regarding the allegedly disclosed values for tensile strength and elongation at break of the inner layer in McGregor et al. without setting forth a technical foundation supporting the supposition that the inclusion of additives **necessarily** results in these features. Applicants submit that this foundation cannot be made, because the alleged relationship is not true.

Therefore, the combination of Wargotz, et al. and McGregor, et al. could only lead to a cable (wire) with a two layer insulation that is completely different from the insulation according to the invention.

Turning to the first criteria noted above for establishing a prima facie case of obviousness, Applicants submit that there is clearly no motivation to combine Wargotz et al. and McGregor et al. in the manner alleged to obtain the presently claimed invention, even if the structure of the insulation in McGregor et al. has the features regarding the relative tensile strength and elongation at break.

The Federal Circuit has recently reminded us that the USPTO is held to a rigorous standard when trying to show that an invention would have been obvious in view of the combination of two or more references. See, In re Lee, USPQ2d 1430, 1433 (Fed. Cir. 2002), citing, e.g., In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”).

The Federal Circuit goes on to emphasize that the “need for specificity pervades this authority.” In re Lee at 1433 (emphasis added) (citing In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”)).

Applicants respectfully submit that the current grounds of rejection do not satisfy the Federal Circuit’s rigorous standard for demonstrating that the claimed invention would have been obvious in view of the combination of Wargotz et al. and McGregor et al.

Specifically, Wargotz, et al. describes (see abstract) an underground power and service entrance cable. McGregor et al., on the other hand describes magnet wire insulation that can withstand voltage wave shapes present in inverter driven motors. Therefore, there is no disclosed motivation for modifying the cable of Wargotz et al. to include the mix additives of McGregor et al., since these additives are disclosed in McGregor et al. as having a very particular application (magnetic wire insulation designed to withstand voltages present in inverter driven motors) not relevant to the application of the cables of Wargotz et al. (underground power and service entrance cables).

In summary, there simply is no teaching or suggestion in the applied art to use the materials as defined in claims 1 and 9 of the present application, because in each applied reference completely different characteristics are needed to address entirely different problems associated with their respective applications.

In view of at least the foregoing distinctions, claims 1 and 9 and dependent claims 2, 3, and 8 are believed to be allowable.

2. Claims 4-7 In View Of McGregor and Livingston, et al..

In rejecting claims 4-7 in view of McGregor and Livingston, et al., the grounds of rejection state that

Livingston, et al. discloses a cable comprising a sheath which comprises an inner layer (28) and an outer layer (30), wherein the values for tensile strength and elongation at break of the inner layer (28) are significantly lower than those of the outer layer (30) (see the C & M document attached herewith, etc. the inner layer being polyethylene and the outer layer being PVDF).

Livingston, et al. also discloses the tensile strength of the inner layer being approximately half of that of the outer layer and

being about 20 N/mm², the elongation of the inner layer being no more than approximately one third of that of the outer layer and being about 150%. It would have been obvious to one skilled in the art to apply the teaching of Livingston, et al. in the cable sheath of Wargotz, et al. such that the cable is stable at moderately high temperatures.


Office Action at page 4.

Without commenting substantively on the particular rejection of claim s4-7, Applicants submit that these claims are allowable at least by reason of their respective dependencies.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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Date: May 27, 2003